DOCUMENT RESUME

ED 465 390 JC 020 416

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TITLE	The Nursing Shortage and the Role of Community Colleges in Nurse Education. Executive Summary. AACC Research Brief.
INSTITUTION	American Association of Community Colleges, Washington, DC.
REPORT NO	AACC-RB-02-5
PUB DATE	2002-00-00
NOTE	13p.
AVAILABLE FROM	Community College Press, P.O. Box 311, Annapolis Junction, MD 20701 (Order # 1541: pack of 20, $20). Tel: 800-250-6557 (Toll Free); Fax: 301-604-0158; e-mail: aaccpub@pmds.com.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Associate Degrees; College Role; *Community Colleges; *Education Work Relationship; *Educational Objectives; *Labor Force Development; *Nursing; *Nursing Education; Two Year Colleges
IDENTIFIERS	*Nursing Shortage

ABSTRACT

This is a report by the American Association of Community Colleges (AACC) on a the shortage of registered nurses (RN) in the United States and the role of community colleges in nurse education. Reasons for the shortage include: (1) inadequate wages; (2) heavy workloads; (3) undesirable work schedules; (4) increased administrative duties; (5) low job security; and (6) few options for advancement. These factors have all led to increased job dissatisfaction, higher turnover, and less interest in the profession. The average age of RNs in 2000 was 42 years and is expected to increase, which will eventually lead to more of a shortage. Community colleges, who have a large part in training and graduating nurses, must improve recruitment and retention efforts for nursing programs in order to help resolve the nursing shortage. Some effective resolution strategies disclosed in the report are: (1) staging public advertising campaigns; (2) promoting the pursuit of health careers to elementary, middle school, and high school students; (3) increasing the number and financial amount of scholarships offered by nursing programs; and (4) offering student loan extension and repayment assistance. The report also recommends that hospitals and other health profession employers find ways to improve job satisfaction, such as flexible schedules, overtime bonuses, transportation reimbursement, childcare, relocation compensation, and increased benefits. A list of community colleges with the highest number of associate degree Nursing graduates is also included. (Contains 17 references.) (MKF)

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AACC-RB-02-5

ED 465 390

RESEARCH BRIEF

The Nursing Shortage and the Role of Community Colleges in Nurse Education

By Arthur Viterito and Carolyn Teich

EXECUTIVE SUMMARY

The latest assessment by the American Hospital Association (AHA) reveals that there are 126,000 vacancies for registered nurses (RN) in hospitals alone. AHA terms the shortage the "most critical manpower problem facing hospitals across America." Community colleges play a key role in educating nurses: 60 percent of all U.S.-educated RNs who entered the field in 2000 received their education at the associate degree in nursing (ADN) level, and 79 percent of ADN recipients graduated from community colleges. Research into the problems and prospects of the nursing profession and the role of community colleges in nursing education reveals the following:

- Between 1996 and 2000, the number of registered nurses per 100,000 persons declined 2 percent in the United States.
- Many of the states with the largest proportional declines of registered nurses also have the fastest-growing retiree populations.
- ADN programs are important gateways to the nursing profession for underrepresented groups.
- Recent initiatives to restrict the scope of practice for RNs who hold associate degrees could exacerbate the nursing shortage.

FIGURE 1 **Regional Change in Number of Registered Nurses per 100,000 Persons: 1996 to 2000**

Source: Bureau of Health Professions Division of Nursing 1996, 2001

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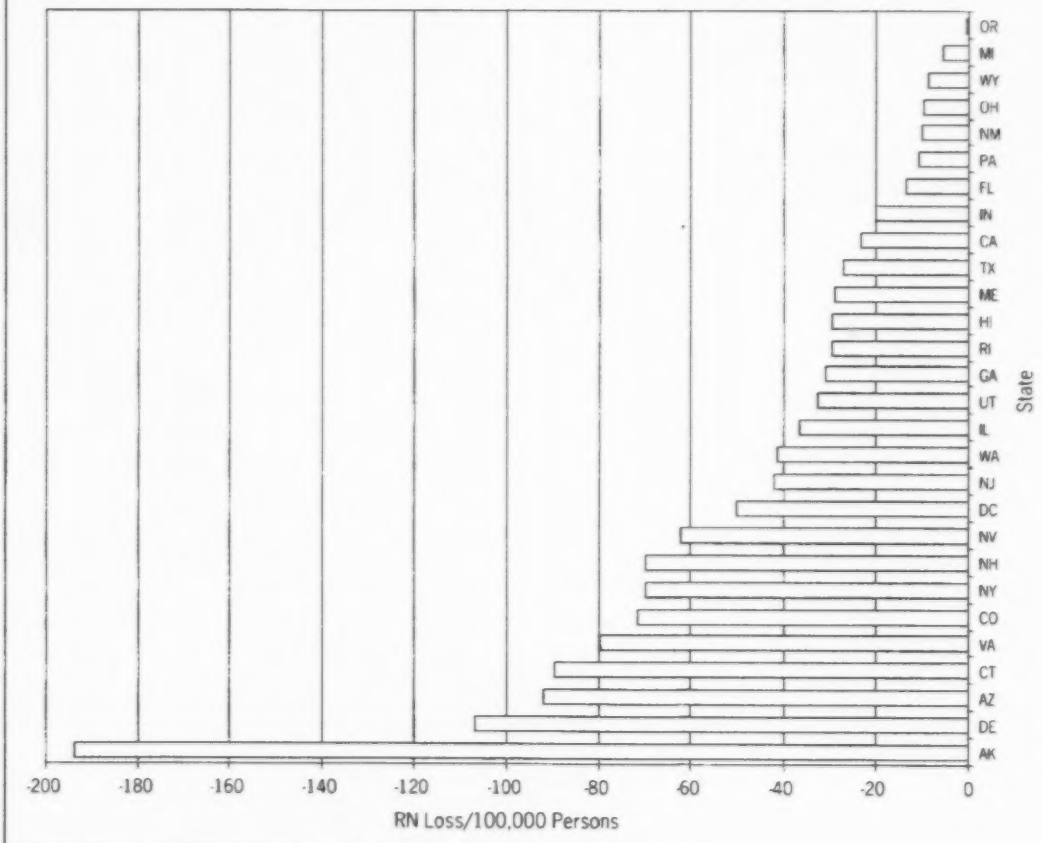
The Nursing Workforce Shortage: An Overview

According to the American Hospital Association (AHA), there are currently 126,000 vacancies for RNs in U.S. hospitals nationwide (AHA 2001). This number amounts to one hospital-based RN vacancy for every 2,230 persons in the United States. Seventy-five percent of all hospital personnel vacancies are for nurses, and the AHA calls the nursing shortage "the most critical manpower problem facing hospitals across America. It is the underlying cause of hospital bed closures, cancellations of elective surgeries, and diversions of ambulances from emergency rooms. It threatens to affect every American needing medical care" (AHA 2001). The shortage of hospital-based RNs is greatest in the areas of critical care medicine and emergency services.

The workforce shortages faced by hospitals are indicative of an overall proportional decline in the nursing population as a whole. The number of practicing registered nurses grew from 2.1 million to 2.2 million, or 4.1 percent, between 1996 and 2000. However, during that same period, the U.S.

FIGURE 2 **States Losing Nurses per 100,000 Persons: 1996 to 2000**



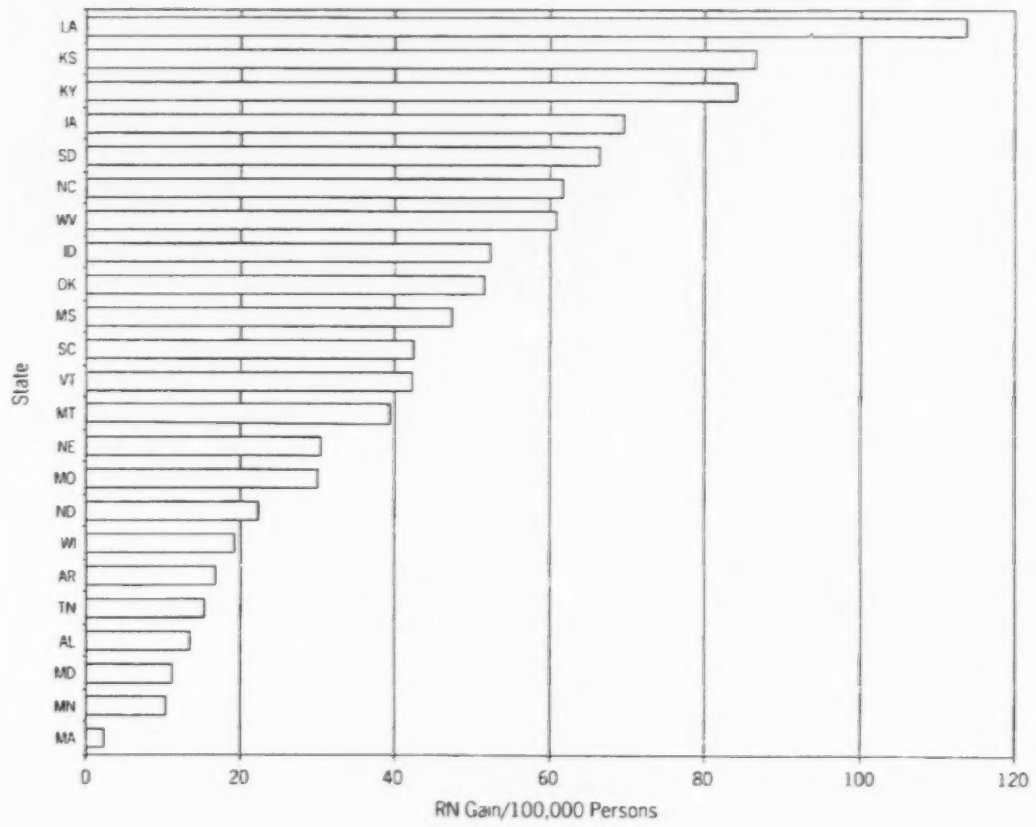
Source: Bureau of Health Professions Division of Nursing 1996, 2001

population increased from 265 million to 281 million, a 6.1 percent increase, resulting in a 2 percent drop in the number of RNs per 100,000 persons during that four-year span (Bureau of Health Professions Division of Nursing 1996, 2001). In 1996, there were 798 RNs for every 100,000 persons in the United States; by 2000, that number had dropped to 782.

The proportional decline in the RN population has not been evenly distributed throughout the United States. The Mountain region and the Middle Atlantic region have sustained the largest proportional declines in RN populations; over the past four years, they lost 50 and 47 RNs per 100,000 residents, respectively (Figure 1). The New England states, the Pacific states, and the South Atlantic region experienced smaller losses. Only in the West North Central, the East South Central, and the West South Central regions is the proportional number of RNs growing.

Of the 28 states that experienced proportional declines in RNs between 1996 and 2000 (Figure 2), losses were highest in Alaska, Delaware, Arizona, Connecticut, and Virginia. Among the 23 states with proportional gains (Figure 3), increases were highest

FIGURE 3 **States Gaining Nurses per 100,000 Persons: 1996 to 2001**



Source: Bureau of Health Professions Division of Nursing 1996, 2001

in Louisiana, Kansas, Kentucky, Iowa, and South Dakota. Eight of the 10 fastest-growing states saw their proportional RN populations dwindle: Idaho and North Carolina enjoyed proportional RN growth, but Nevada, Arizona, Colorado, Utah, Georgia, Florida, Texas, and Oregon all experienced declines. Nevada, Alaska, and Arizona ranked first, second, and third of the states with the most rapid proportional growth of residents aged 65 and older, yet they ranked ninth, first, and third, respectively, in proportional RN decline. Each of these trends has the potential to place further strain on our nation's healthcare delivery system, especially in the area of acute care.

Causes of the Nursing Workforce Shortage

A recent study by the U.S. General Accounting Office (GAO) cites many reasons for the nursing shortage. Chief among them are recruitment and retention problems associated with an aging nursing workforce, heavy workloads, inadequate staffing, increased use of overtime, lack of sufficient support staff, and inadequate wages (GAO 2001). The AHA cites several sources of nurse dissatisfaction that pose barriers to nurse recruitment and retention; they include reduced patient contact, higher patient acuity, increased administrative workloads, undesirable shift work, loss of autonomy, inadequate stimulation, unclear career options, and diminished job security (AHA 1999).

Worker Dissatisfaction

The degree to which nurses are dissatisfied with the profession has been highlighted in a number of studies. One survey, conducted by the Federation of Nurses and Health Professionals (2001), revealed that 50 percent of currently employed RNs are thinking about leaving the field for reasons other than retirement. A study by the Nursing Executive Center (2000) showed that 28 percent of nurses were dissatisfied with their jobs and that 51 percent of those surveyed were more dissatisfied in 2001 than they had been just two years earlier. Finally, a survey by the American Nursing Association (2001) showed that 55 percent of registered nurses and licensed practical nurses would not recommend the nursing profession to others. Twenty-three percent of these respondents said they would discourage family or friends from entering the profession (American Nursing Association 2001).

Such widespread disaffection is relatively unique among the health professions, and it has been a major contributor to the profession's retention problems (Federation of Nurses and Health Professionals 2001). A survey of 100 hospital administrators revealed that 55 percent of respondents stated they target nurses more than any other employee group when determining their retention strategy (Nursing Executive Center 2000). By comparison, the second-largest employee group, pharmacists, was the target of only 24 percent of focus efforts by respondents. The survey also showed that the turnover rate among hospital staff nurses nationwide grew from 12 percent in 1996 to 15 percent in 1999. Surveys by

the Hospital and Healthcare Compensation Service (2000) and the American Health Care Association (1999) report even higher turnover rates in nursing homes and home healthcare agencies (51 percent and 21 percent, respectively).

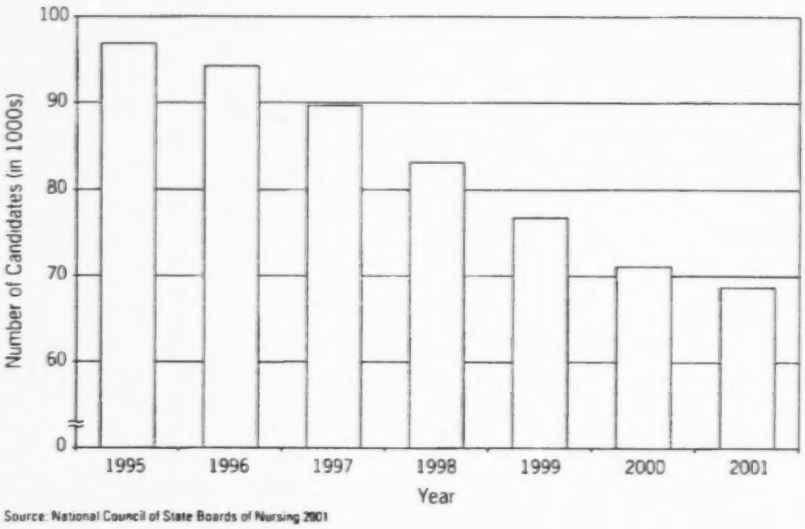
An Aging Workforce

Like the general population, the nursing workforce is aging. Buerhaus and colleagues (2000) note that the average age of the RN workforce was 42.4 years in 2000 and that it will increase to 45.4 years by 2010. "Over the next decade," these authors note, "this aging will continue as the largest cohorts of RNs will be in their 50s and 60s, after which the RN workforce will contract as these cohorts begin to retire." They predict that by 2020 the size of the RN workforce will be nearly 20 percent below projected requirements (Buerhaus, Staiger, and Auerbach 2000).

A Shrinking Pipeline

A further reason for workforce shortage is a steady decline in the number of nurses graduating from nursing programs and subsequently becoming licensed. The National Council of State Boards of Nursing (2001) reports that the number of U.S. graduates taking the National Council Licensure Examination for Registered Nurses (NCLEX-RN®) for the first time declined from 96,610 in 1995 to 68,759 in 2001, a 29 percent drop (Figure 4).

FIGURE 4 **Number of Candidates Taking NCLEX-RN®: 1995 to 2001**



Source: National Council of State Boards of Nursing 2001

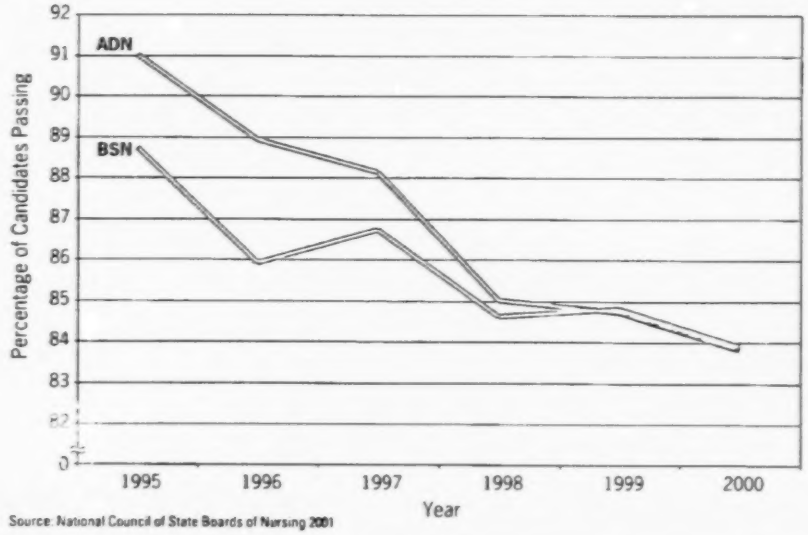
The NCLEX-RN® data also reveal that the passing rates for both ADN and baccalaureate-prepared (BSN) candidates have also dropped (Figure 5). A peer analysis of the Integrated Postsecondary Education Data System (IPEDS) reveals that the graduate pipeline is highly skewed with regard to geographic setting. Colleges in rural areas are experiencing the largest reductions in graduates, followed by large towns and small towns (National Center for Education Statistics 1995, 2000) (Figure 6). These low-density population areas will undoubtedly be hardest hit by the growing nursing shortage.

Role of Community Colleges in Nurse Education

Community colleges are the primary educators of new registered nurses in the United States. In 1997, 701 community colleges awarded 41,258 associate degrees in nursing (National Center for Education Statistics 1997). If ADNs awarded by colleges and universities that also grant baccalaureate degrees are included, the number of ADNs increases to 51,939. The aggregate ADN graduate pool constituted 60 percent of the U.S. graduates who took the NCLEX-RN® examination in 2000, and these individuals represent the largest cohort of nurses entering the profession (National Council of State Boards of Nursing 2001). By comparison, baccalaureate programs graduated 37 percent of the total, and diploma, or hospital-based educational programs, graduated 3 percent (Figure 7). Appendix A lists the community colleges that produced the highest number of nursing graduates in 2000.

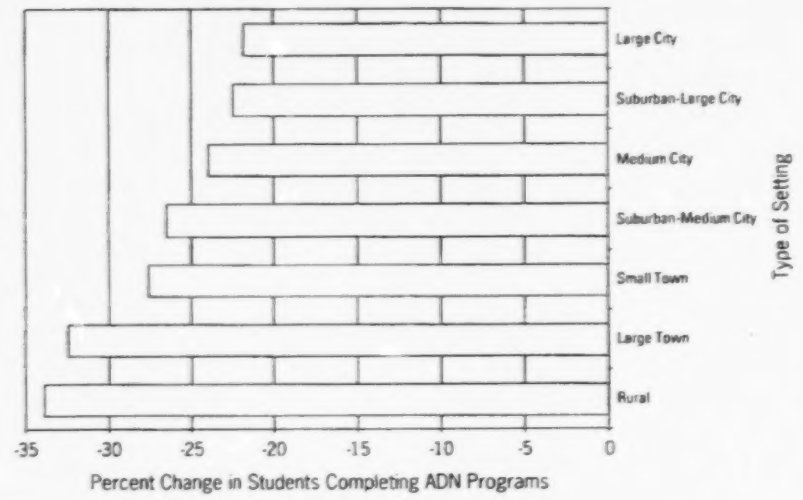
In addition to educating the majority of nurses entering the profession, ADN programs provide significant opportunities for older students, as well as for students from underrepresented populations. Community colleges are the colleges of choice for entry into the nursing field for African American, Hispanic, and Native American students. Fifty-seven percent of non-diploma African American graduates were educated in associate-degree programs in 1997

FIGURE 5 **NCLEX-RN® Examination Pass Rate, by Degree: 1995 to 2000**



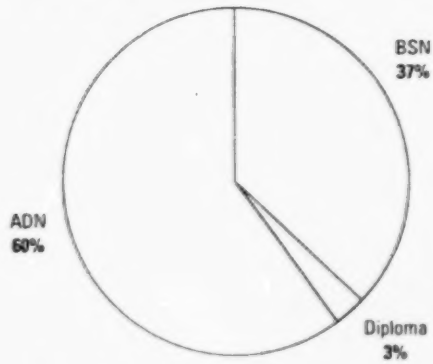
Source: National Council of State Boards of Nursing 2001

FIGURE 6 **Percent Change in Students Completing ADN Programs in Community Colleges in Rural, Suburban, and Urban Settings: 1995 to 2000**



Source: National Center for Education Statistics 1995, 2000

FIGURE 7 **Percentage of Registered Nurses Entering the Profession, by Degree: 2000**



Source: National Council of State Boards of Nursing 2001

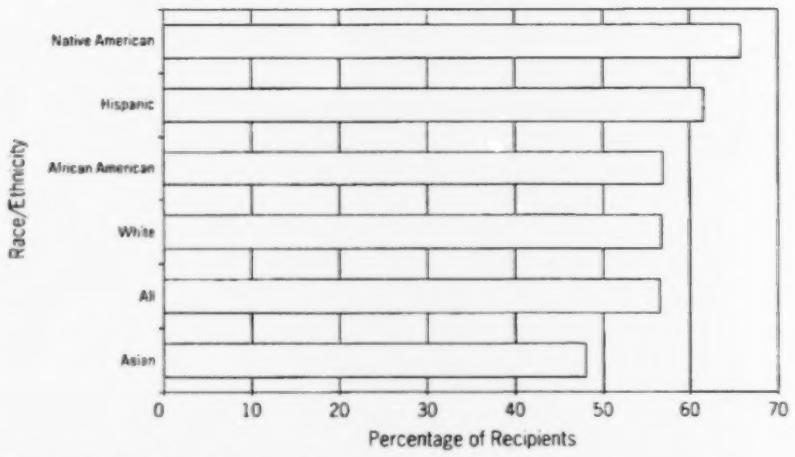
(Figure 8). Even greater proportions of Hispanic (61 percent) and Native American (66 percent) nursing graduates received associate degrees. Additionally, the proportional representation of each of these groups has increased from 1995 to 2000 with respect to the overall associate-degree nursing population, especially for African Americans (7.1 percent of all ADN graduates in 1995 and 12.6 percent of all ADN graduates in 2000) and Hispanics (4.2 percent in 1995 to 7.4 percent in 2000) (Figure 9). Finally, community colleges educate the majority of nursing professionals in rural areas: 73 percent of all nursing graduates in rural settings came from ADN programs (National Center for Education Statistics 2000).

Resolving the Nursing Shortage: A Shared Responsibility

Increasing the nation's supply of registered nurses will not be easy, and all institutions of higher education should place a high priority on recruiting students into their nursing programs. Many nursing programs are already engaged in such efforts, using innovative strategies. For example, some programs are approaching elementary school students to encourage them to pursue careers in the health professions. Other strategies include increased scholarship pools, student loan extensions, and programs that enable graduates to provide professional services in exchange for reduction or cancellation of their student loans.

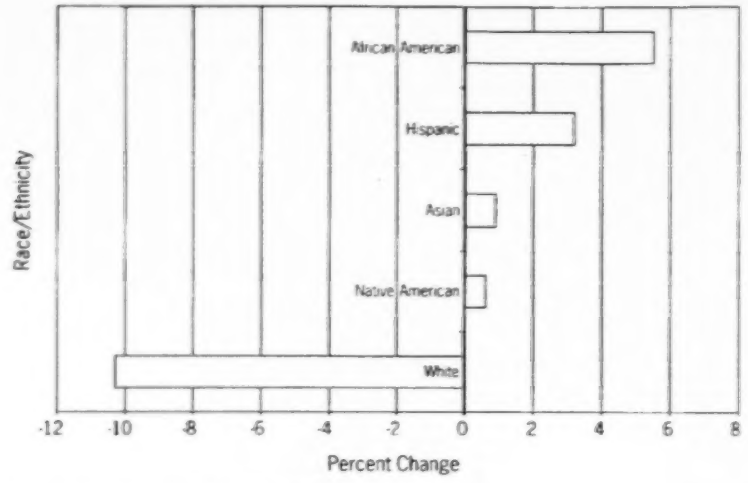
Employers of nurses must find ways to improve employee satisfaction in order to increase the retention rate. Hospitals must find ways to alleviate poor working conditions, including mandatory overtime, lack of qualified support staff, and high patient-to-nurse ratios. Additionally, the AHA recommends that hospitals adopt incentives to retain nursing personnel, such as flexible work schedules, bonuses, childcare, relocation compensation, reimbursement for transportation costs, higher wages, and better benefits (AHA 2001). The image of nurses can be enhanced by public advertising

FIGURE 8 **Percentage of Nursing Degree Recipients Who Were Awarded ADNs, by Race/Ethnicity: 1997**



Source: National Center for Education Statistics 1997

FIGURE 9 **Changes in Percentage of ADN Graduates, by Race/Ethnicity: 1995 to 2000**



Source: National Center for Education Statistics 1995, 2000

campaigns that portray the rewards of a career in nursing. Also needed are career ladders that would improve professional mobility.

It is important to note that emerging policy shifts may diminish or even eliminate the impact of such efforts, however successful they might otherwise be. Most notable is a move to redefine the scope of practice for RNs on the basis of the educational setting in which they were prepared. Efforts to make the baccalaureate degree the entry-level requirement for registered nurses are under way in a number of states. Support for such policy change continues, despite a lack of evidence of differences in job performance between RNs who enter the profession holding an associate degree and those who hold a bachelor's degree. Imposing such limitations could create an unnecessary barrier for those seeking to become RNs and could exacerbate the current nurse shortage.

Community colleges have a major role to play in overcoming the nurse shortage, and they can take action in several ways. First, they must increase their efforts to recruit and retain nursing faculty and students to ensure an adequate supply of qualified nurses and nurse educators. The pace of these efforts will need to be stepped up as the U.S. population, as well as the nursing workforce, ages. Community colleges must also ensure that the quality of nursing programs remains high. Colleges must give high priority to innovative instruction to ensure that tomorrow's nursing graduates are practicing with state-of-the-art capabilities. Community colleges must continue their mission of providing access to all segments of the population in order to achieve the broadest-possible participation in the nursing profession. Finally, community colleges must be vigilant to local, state, and federal initiatives that seek to limit the scope of practice of ADN graduates.

APPENDIX A Community Colleges with the Highest Number of Associate Degree Nursing Graduates (2000)

Institution	State	Male	Female	Total
Miami-Dade Community College	FL	62	272	334
Fresno City College	CA	35	193	228
Broward Community College	FL	19	193	212
Saint Petersburg Junior College	FL	33	172	205
Florida Community College at Jacksonville	FL	22	168	190
Cuyahoga Community College District	OH	16	170	186
Community College of Rhode Island	RI	19	161	180
Delgado Community College	LA	24	148	172
San Antonio College	TX	38	130	168
Hillsborough Community College	FL	26	139	165
Owens Community College-Toledo Campus	OH	18	147	165
Salt Lake Community College	UT	27	137	164
Palm Beach Community College	FL	17	140	157
Manic College	CA	22	133	155
Daytona Beach Community College	FL	19	127	146
San Jacinto College-Central Campus	TX	11	134	145
El Centro College	TX	19	125	144
Tarrant County College	TX	23	118	141
Mississippi Gulf Coast Community College	MS	11	128	139
Suffolk County Community College-Ammerman Campus	NY	20	116	136
Community College of Allegheny County	PA	17	118	135
Front Range Community College	CO	17	113	130
Hocking Technical College	OH	16	109	125
Pensacola Junior College	FL	20	105	125
J Sargeant Reynolds Community College	VA	8	116	124
Henry Ford Community College	MI	11	110	121
Valencia Community College	FL	19	102	121
Helene Fuld College of Nursing	NY	9	109	118
Mesa Community College	AZ	11	106	117
Prince Georges Community College	MD	12	103	115
Riverside Community College	CA	20	95	115
CUNY Borough of Manhattan Community College	NY	11	103	114
Santa Fe Community College	FL	17	97	114
Union County College	NJ	12	102	114
Anoka-Ramsey Community College	MN	6	107	113
William Rainey Harper College	IL	11	101	112
Midlands Technical College	SC	14	97	111
Nassau Community College	NY	10	101	111
Brookdale Community College	NJ	12	96	108
Oklahoma State University-Oklahoma City	OK	9	98	107
The Community College of Baltimore County	MD	13	93	106
Georgia Perimeter College	GA	9	96	105
Jefferson Community College	KY	12	93	105
Pima Community College	AZ	10	95	105
North Harris Montgomery Community College District	TX	8	96	104
Tulsa Community College	OK	8	96	104
CUNY Queensborough Community College	NY	6	97	103
Albuquerque Technical Vocational Institute	NM	18	84	102
Palomar College	CA	6	96	102

Source: National Center for Education Statistics 2000

Institution	State	Male	Female	Total
Des Moines Community College	IA	9	92	101
Madison Area Technical College	WI	9	91	100
Walters State Community College	TN	5	94	99
St Josephs Hospital Health Center School of Nursing	NY	2	96	98
Triton College	IL	4	94	98
Lorain County Community College	OH	9	88	97
Northern Virginia Community College	VA	7	90	97
Macomb Community College	MI	7	89	96
Milwaukee Area Technical College	WI	14	82	96
Meridian Community College	MS	5	90	95
Edison Community College	FL	14	80	94
Houston Community College System	TX	15	79	94
McLennan Community College	TX	15	78	93
Austin Community College	TX	12	80	92
Grossmont College	CA	10	82	92
Kellogg Community College	MI	10	82	92
Oklahoma City Community College	OK	10	82	92
Butler County Community College	KS	12	79	91
Community College of Philadelphia	PA	14	77	91
Greenville Technical College	SC	8	83	91
Normandale Community College	MN	10	81	91
Monroe Community College	NY	9	81	90
Columbia State Community College	TN	6	83	89
Metropolitan Community Colleges	MO	6	83	89
Southern Union State Community College	AL	13	76	89
Amarillo College	TX	8	80	88
Camden County College	NJ	10	78	88
Delaware County Community College	PA	10	78	88
Western Iowa Tech Community College	IA	6	82	88
Pasco-Hernando Community College	FL	11	76	87
Rose State College	OK	16	71	87
Saddleback College	CA	6	81	87
East Los Angeles College	CA	19	67	86
Los Angeles Valley College	CA	23	63	86
North Hennepin Community College	MN	7	79	86
Trident Technical College	SC	9	77	86
Wayne County Community College District	MI	10	76	86
Louisiana State University at Alexandria	LA	15	70	85
Pasadena City College	CA	14	71	85
Iowa Central Community College	IA	9	75	84
Massachusetts Bay Community College	MA	10	73	83
Bucks County Community College	PA	8	74	82
Central Texas College	TX	8	74	82
Community College of Southern Nevada	NV	12	70	82
County College of Morris	NJ	10	72	82
Lexington Community College	KY	6	75	81
Wytheville Community College	VA	8	73	81
Chattanooga State Technical Community College	TN	10	70	80
Los Angeles County College of Nursing and Allied Health	CA	18	62	80
Rochester Community and Technical College	MN	6	74	80
Capital Community College	CT	10	69	79
Indian River Community College	FL	10	69	79
Manatee Community College	FL	9	70	79

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The authors wish to thank Margaret Rivera, Kent Phillippe, and Christopher Shults for their invaluable assistance in preparing this manuscript.

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